

POPULAR COMPUTING WEEKLY

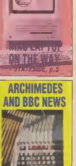
FIRST WITH NEWS AND REVIEWS!

55p AUGUST 3 1989



SINCLAIR SPEAKS

WE TALK TO SIR CLIVE ABOUT LIFE, THE UNIVERSE, POCKET PCS AND BICYCLES, IN HIS FIRST MAJOR INTERVIEW IN AGES! TURN TO PAGE 1[illegible]



MAC LAPTOP ON THE WAY
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ARCHIMEDES AND BBC NEWS

DUNCAN EVANS AT THE ACORN SHOW, p.31

COMMODORE 64

CD-ROM REVIEW!

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STOPWATCH LISTING!

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ATARI ST

NEW TAX PLANNER

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GAMES

- NEW ZEALAND STORY
- ALIEN LEGION
- FIENDISH FREDDY PREVIEW

ST, AMIGA, SPECTRUM, BBC AND PC PROBLEMS SOLVED, p.36

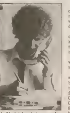
BUDGETS BURST OUT

TWO NEW budget games labels are being launched this summer bringing a host of new games and some re releases to the 8-bit market at £2 99

Videocoders is the name of a new company set up by Jonathan Edgar The first games for all the major 8-bit machines are expected to be in the shops at the beginning of September priced at £2 99 Games will be in cassette format initially with discs probably following later

Prizes of cash or equipment are promised for the first gamers to complete each game many of which will be shoot-em-ups What is described as a "semi shoot-em up" called Boing is currently top of the list It runs on the C64 and has over 400 scrolling animated screens

Edgar who previously ran a company called Companion producing utilities for the Spectrum commented



John Edgar's independent company plans cash promise to quick gamers.

We are a completely independent company and all our games are original Once the label is established we will set up a full price label and perhaps deal with 16-bit software as well "

Secondly this week sees the launch of a new budget label by the man who has previously opened up markets for the likes of Mastertronic Code Masters and Firebird Silver as a distributor

We've done it for everyone else so why not do it for ourselves?" commented a company spokesperson

Now Richard Bielby has formed a new budget label Cobra and signed a back-catalogue deal with Gremlin for ten games all of which will retail for £2 99 The first releases will be MASK Cosmic Pirate and Kendo Warrior in C64 Amstrad Spectrum and Atari 8-bit versions Subsequent releases will be mainly conversions of games already available

Solid of revolution from Zing.

Mavis on a QWERTY

MINDSCAPE is certainly launching some interesting software lately Following the inimitable *Life and Death* game comes a crop of productivity software New titles include *Zing*, *Mavis Beacon Teaches Typing* and *The Secretary Bird*

Zing is a 3-D graphics package for the PC and Mac that allows user created images to be transported between the two machines Symmetrical 3-D shapes are created by an outline on an axis which then generated by a solid of revolution by rotating the outline around the axis

A profiler allows users to draw multiple 2-D cross sections to produce a 3-D image Priced at £149 99 Zing is aimed at DTPers and its image format is compatible with all major packages

Mavis Beacon Teaches Typing is a tutoring program with a difference for the Atari ST Amiga Apple II GS Mac or PC In built AI routines supposedly tailor your lessons to your ability but Mavis your innovative instructor has some pretty neat tricks up her sleeve One lesson involves a road race in which you are sent headlong down a race track in a fast car losing speed (and the game) whenever you make a typing mistake The price is £29 99

The Secretary Bird is a four in one office pack for the PC with a WP spelling checker database and spreadsheet The price is £39 99 Mindscape can be reached on 044 486 545

• *Fiendish Freddy* preview see page 12 in this issue

Dead PC1 may live

JEFF EARL (above) the gregarious new marketing supremo at Commodore, may revive the firm's cheap PC-clone, the PC1, which was priced at £315 The machine died a death this year when supplies dried up after German schools switched over to PC XTs Commodore Germany, which supplies hardware to the U.K , stopped making the base model

In the U.K , this has left the Amstrad PC200 at £299 the cheapest PC available In an exclusive interview with *Popular Computing Weekly*, Earl said he is considering relaunching the 8088-based machine if there is sufficient demand Future plans for the CBM PC line, says Earl, include battery and mains powered laptops, and two desktops based on the 80386 and 80386SX Launch dates for the Amiga 2500 and 3000 are still woolly, with no firm dates being offered.

Meanwhile, rival Atari has stated August 25th as launch day for the TT the 68030 based ST workstation.

Advertising consolation

EXPECT some well weird Sega ads on your TV soon – Sega has appointed the agency that does the Domestos and Flora margarine ads to make a series of TV ads – can you imagine the catch lines? *Pop* scribes are wondering what lines the ones-in-mod-braces-and large-red framed-specs will come out with Maybe "Sega – half the fat of other consoles kills 99 percent of all andwn alien slime "?

• New Sega games reviewed page 15

This Week

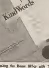
NEW AMIGA, C64 PACKS

EXCLUSIVE details of three new Amiga and C64 bundles have been obtained by *Popular Computing Weekly*.

Independent software publisher The Disc Company has put together the packages which sources insist will not be officially endorsed by Commodore.

There are two Amiga packs and one for the C64 on the cards. These are expected to include:

- The Starter Pack, including an A500, the Kind Words 2.0 word processor package and three games, including *Buggy Boy* and *Crazy Cars*.
- The Home Office Pack, including an A500, the Publisher's Choice DTP package (made up of Kind Words 2.0 plus Pagesetter 1.2) and a database.



Calling the Home Office with The Disc Company

- The C64 Test Pilot Pack: this special theme box will include five simulators (not all flight sims) for the C64, including *Advanced Tactical Fighter*, from Digital Integration.

Sources suggest that both the Starter and Test Pilot packs are already being test marketed in New Zealand and Belgium respectively, where The Disc Company has subsidiaries.

The packs are expected to be launched in the U.K. either before or during the PC Show – although curiously the Disc Company will not be exhibiting; dealers and distributors are expected to show the products.

Popular Computing Weekly understands that the bundle prices are likely to be as follows: A500 Starter Pack circa £399, A500 Home Office Pack circa £449 and C64 Test Pilot Pack around £150.

Hackers get the message

UNCLE Sam has come down like a ton of bricks on hackers in the last week, with Kevin Mitnick jailed for a year and the announcement that alleged Pentagon virus spreader Robert Morris is to face charges of illegal computer entry.

Mitnick was convicted of using stolen passwords to access computers. He will serve one year in jail and six months in rehabilitation in a halfway house.

Robert Morris, whose alleged worm virus on the Pentagon's Internet affected 6000 UNIX terminals last October, will be charged with illegal manipulation of a 60 000 machine network. The worm program exploited a loophole in UNIX that allowed it to tag itself onto e-mail messages.

Photon Paint under an Illusion

AFTER the wrangle between Activision and MicroIllusions over who would distribute Photon Paint 2 and Music X in the U.K., it seems that MicroIllusions, who produce the packages in the U.S., have won out.

The packages have been available in the States for over a year now but have only made appearances this side of the Atlantic in demo form and are in need of de-bugging. However, the products are now in the shops and are being distributed by MicroIllusions (Europe) which can be contacted on 0480 595605.

Fonetic thisorus faw Ameega

KUMA CLAIM to have the first standalone thesaurus for the Amiga. Based on Longman's Pocket Thesaurus, K-Roget has over 150,000 words and phrases allowing users of word processors or even databases to expand their vocabulary.

A phonetic spelling checker hunts for alternatives to words based on how they sound rather than how they are spelt. This is expected to help users whose first language is not English.

Please note that an extra disc drive is required or a hard disc as the standard Amiga is insufficient to run it.

A special offer price of £29.95 inc VAT applies to K-Roget for the Amiga and for the PC and ST versions already available. Contact Kuma on 07357 4335.

Sculpted Amiga

AN INCREASE of between 300 and 800 percent in basic ray tracing speeds is claimed for the enhanced graphics package Sculpt 3DXL on the Amiga.

If you relish the power bestowed upon you by Populous, this package allows you to create your own universe, says Martin Lowe of the Amiga Centre Scotland. Among a host of features are segmented and cubic splines to smooth the joints of organic objects, a range of surfaces including luminous, mirror and metal and interlace/non-interlace resolutions which are among graphics modes supported.

Contact the Amiga Centre Scotland on 031 [illegible]

The juggling Sculpt 3DXL rendered smooth.

Sam Coupe: develop Z80 code for the micro on an IBM PC.

SAM develops

SOFTWARE developers keen to start creating programs for the long awaited SAM Coupe, or to convert Z80 software to take advantage of the Coupe's extra graphic and sonic capabilities will soon be catered for.

Professional software is usually written in assembly language using development systems. Programmer's Development System (PDS), the most popular, runs on PCs and comprises assemblers, software tools and a special interface for the target machine. MGT are collaborating with PDS to produce the development system for the SAM Coupe. It can be used in combination with the Bo Jangeborg graphics package and will be available before the Coupe's launch.

IN BRIEF

Chartbound

[illegible] release from console-maker Sega has [illegible] into the [illegible] games [illegible] number 2. [illegible] an incre[illegible] [illegible] games. Sega attribute their success to a strong list of over 80 games with an average of [illegible] to four new ones each month. [illegible]'s distributor Virgin Mastertronic has announced a new deal with [illegible] which will mean the Master System Plus is stocked in all their branches.

Miracom up for sale

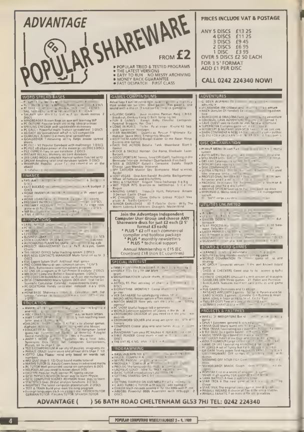
MODEM maker Miracom has [illegible] into the hands of receivers [illegible] out its troubled [illegible] following the failure of a [illegible] the firm's suppliers. US Robotics [illegible] Gully has been [illegible] creditors while [illegible] buyer is sought. [illegible] John told *Popular* [illegible] only people who have [illegible] US Robotics and I [illegible] we will [illegible] warranties apply [illegible] under the [illegible] themselves.

BT takes over Micronet

[illegible] has announced [illegible] holding of [illegible] Group, publishers [illegible] 40 percent [illegible] of the [illegible] Telemap's [illegible] a big [illegible]

ST gets TEX-ed

TEX, the document [illegible] typesetting program [illegible] Donald Knuth, is now [illegible] public domain for 1MByte Atari ST [illegible] supplied on four [illegible] for £10 inc p&p from The [illegible] Software Library, PO [illegible]


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$tateside

Steve Gold reports on hot news from the U S

Apple to unveil Mac lap-top

APPLE will unveil its first lap-top Macintosh later this month at the Boston Macworld Expo in the U S. The machine which has been code-named Laguna, weighs 14 to 17lb, depending on configuration and is based on a Motorola 68000 microprocessor running at 16MHz.

In its basic configuration, Laguna will have 1MB of RAM and a single 1.44MB 3.5in floppy drive, pricing from $3,500 upwards. The top-of-the-range machine, with a 40MB hard disc internal modem and as much as 5MB of RAM – a great deal for a lap-top – will cost $6,500.

Part of the reason for the weight of the Laguna is that it is powered by an internal lead-acid battery, just like the heavy one in cars. The LCD screen, however is more up-to-date, and is a 9.8in active matrix unit capable of resolving a full Mac monochrome screen. Other features of the Laguna are the same number of I/O ports as the standard Mac S/E., with our expansion board slot and an SE like Processor Direct Slot.

Power will in your lap from Apple.

ST utility

• Maxwell Computer Products Unlimited has announced an interesting Atari ST utility package, Gogo ST. The £34.95 package allows almost all ST packages to be run using a single click of the mouse button. Built round a GEM interface, Gogo ST presents the user with 15 selection boxes and the ability to load any program name into the boxes.

Other features include a pop-up digital clock, a logging facility and a powerful macro/file loader option. MCPU can be contacted on 0101-303-666-4470.

Super ST

• *Start Magazine* in the U.S is boasting a world exclusive on the ST Plus, also known as the Super ST. The September issue, due at the end of this month, has an exclusive review on the machine. Details of the machine are sketchy but it is known to be downwards-compatible with the existing ST series and has a 4 096-colour palette and eight channel stereo sound as standard features. CPU details on the ST Plus vary, depending on the source. My guess is that the machine will be 68020 microprocessor-based and will have between 1MB and 4MB of RAM. The machine will be unveiled officially during September, suggesting a U K Personal Computer Show unveiling on this side of the Atlantic. Pricing is unknown but Jack Tramiel announced previously that the ST Plus will be priced competitively, suggesting a $1 000 to $1,300 price in the U.S.

PD pitch

• Also in the pipeline from Atari is an ST package, *Demo Maker*. The public domain package is pitched at software houses and users who want to create a rolling demonstration of ST packages without the fuss of running the program code proper.

Although Demo Maker is aimed at shops for ST window displays, first reports from the U S suggest that some enthusiasts are using the package to grab sprites and full screens from protected popular software to incorporate the code in their programs. The package could bring a whole new meaning to the clone program world. It could also spell trouble for the major games producers.

Amiga animation

• Amiga users are turning to a new public domain and shareware company in the U.S., Premier Software. Premier has amassed one of the largest U.S collections of PD and shareware software, with the latest hot product, *Lost In Scape*, featuring a 40-second real-time animation for the Amiga.

The three-disc PD package sells for $12 but requires a full 2MB of RAM to run. Call Premier for a copy of the catalogue on 0101-415-364-4696.

Key revival

• Amiga owners are beginning to rediscover the Control J key when running the CLI. Instead of pressing return after every command line, pressing Control J stores the command until the return key is pressed at the end of several lines. Thus a chain of commands can be stored for rapid execution.

The Control J key was detailed in early Amiga 1000 manuals but for some strange reason has not been detailed for A500 and Amiga 2000/2500 series owners. It avoids creating a script file, so it seems a pity that Commodore is hiding this powerful feature from the public. Thanks to John Rydell of the Amy Today on-line newsletter for this long lost but very useful tip.

The Control J key on your Amiga has hidden assets.

SHOWTIME

SEPTEMBER 27 – OCT. 1
The Personal Computer Show

OCTOBER 4 – 6
International Desktop Publishing Show

NOVEMBER 1 – 4
MacUser Show

NOVEMBER 7 – 9
Computer Graphics '89

NOVEMBER 11
Alternative Micro Show and Electronics Fair

NOVEMBER 24 – 26
Computer Shopper Show

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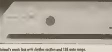
Telephone: 01-278 6622

8 HERBRAND STREET
LONDON WC1

Supersonic games on the way

STAND BY for some of the most awesome sounds ever produced by a computer game. One of the world's leading synthesizer makers has developed a powerful sound box for use with computers and an American games producer is about to launch a range of products which will use this box to raise games music and sound effects to new levels of sophistication and realism

The box, devised by the Japanese electronic music giant Roland, comes in several versions One, the £369 CM32L, is based on the company's popular MT-32 stereo synthesizer module It offers up to 32 simultaneous notes using eight different musical sounds (chosen from a range of 128) and a rhythm section For the computer model, a chip with 32 sampled sound effects including gunshots, car noises and screams has been added



Roland's music box with rhythm section and 128 note range.

Another version, the £445 CM-32P, is based on Roland's D-110 sample-playing module and comes with 64 high-quality sampled sounds built in Extra sounds are available on plug-in memory cards A third module, the £789 CMM-64, is a combination of the first two.

The modules can be driven by any computer using a Midi interface For IBM PCs and compatibles, a £379 card version of the CM-32L will be available A Midi interface will add £79 to the price.

George Thorn, manager of Roland's new computer division, says the modules are aimed at computer hobbyists who are put off by the complexities of Midi In the next few months, Roland will be launching a series of easy-to-use programs including sequencers and sound editors to go with the modules

"The idea will be to treat music as a game," explains Thorn Roland plans to market programs for the Atari ST, the Apple Macintosh and MS DOS machines Software prices have not been finalised but are likely to be in the range £100–£200

The modules will also be supported by several games to be released in coming months by the American software house Sierra The games, for the ST, Amiga and PC, include the intergalactic adventure *Space Quest III* which will have a soundtrack written by *Supertramp* drummer Bob Siebenberg. The programs will be distributed by Activision

Warning signs for games loaders?

PRESSURE is mounting on the software industry for it to voluntarily place anti-piracy notices on the front loading screens of all games

Following a meeting between the Federation Against Software Theft (FAST) copy protection software house Speedlock and duplication house Reflex Magnetics representations are to be made to ELPSA the European Leisure Software Publishers Association to get cigarette packet like warnings placed on software loaders

David Looker a director of Speedlock told *Popular Computing Weekly* that while nobody expects the message to have a great effect on large scale piracy the idea is "to reinforce the legal position of software houses when taking legal action against pirates "

By informing users that to copy and distribute the software is illegal the "I didn t know it wasn t allowed" defence crumbles immediately

Andrew Hewson chairman of ELSPA has yet to hear from FAST "We ve made no official moves on piracy at all yet – we re waiting to hear from FAST the ball is in their court

• *Do you want to be reminded of piracy each time you boot a game? Write and tell us see address on page 9*

Blitzed!

Copy protection writers Speedlock claim they have written an Atari ST protection routine which disables the Power Computing *Blitz* copier – and possibly many other devices David Aubrey Jones co-director of the firm told *Popular Computing Weekly* "We ve taken a close look at the Blitz and found that, along with older versions of the multiface we can stop programs being saved to disc " Speedlock's clients include Microprose all future ST games from Microprose will not succumb to copying with a Blitz device Aubrey Jones hopes to be able to block out all copiers soon Speedlock is on 0734-470303

The law on copying

THE COPYRIGHT DESIGNS AND PATENTS ACT 1988
Part 1 Paragraph 107 Section 2
(2) A person commits an offence who
(i) makes an article specifically designed or adapted for making copies of a particular copyright work or
(ii) has such an article in his possession
knowing or having reason to believe that it is to be used to make infringing copies for sale or hire or for use in the course of business

Until a test case is heard, the 1988 Act is open for interpretation and the legality of copying hardware remains unclear

POPULAR COMMENT

"If any Amstrad PC dealers want to get in bench with us we're ready to talk business." So said a cheerful Commodore marketing manager, Jeff Earl, clearly gleeful at the thought of his rivals hard disc problems, and the recalls they have caused – see page 3 last week.

But according to dealers, Amstrad's troubles are not particularly good news for home computer companies like Commodore and Atari. The reason is that both firms are trying to be taken seriously as PC suppliers.

The dealers say that the mud is sticking home computer companies making PCs are being tarred with the brush of the latest PC2000 episode – so perhaps Mr Earl's obvious pleasure at Amstrad's problem is premature Users feel that perhaps if one consumer market player can get it wrong, so can another

The home computer boys now have a lot of work to do to regain credibility in the PC stakes. Perhaps that's why Commodore is rethinking its approach to the cheaper end of the market – see page 2

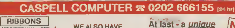
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STAR LETTER

Lead-free in his pencil

I wholeheartedly agree with Derek Wras's sentiments regarding the environment. Yes, hobbies involving modern electronics are more environmentally friendly than some other pursuits but at what cost? Historically how much damage has been done to the environment to arrive at the present state-of-the-art?

Furthermore, I wonder what proportion of electronic sales are bought by serious hobbyists compared to those buying gadgets in order to 'keep up with the Jones' with no regard to the environmental cost of their manufacture.

You mention the use of unleaded petrol but what of the extra engine wear requiring more frequent replacement at what cost to the environment – perhaps even greater than using leaded petrol. I could go on.

Perhaps we should uninvent the Infernal Combustion Engine then perhaps the environment may stand a chance if it's not already too late.

Paul A.B. Bruton, Milton Keynes

POPULAR POSTBAG

WRITE TO: Popular Computing Weekly, Greencoat House, Francis Street, London SW1P 1DG.

Going loco

I have an Amstrad 8256 used for writing a book and virtually nothing else. After changing from Loco 1 to Loco 2 I met the problem of changing layouts for the insertion of quotations and here although for my purposes only margins and type size are involved and although I can set these up I cannot get them on to Stock Layout for use next time. Nor can I get back to the original layout without resetting each.

When I worked with Loco 1 I had no such difficulty and, although I have tried to follow the Loco 2 guide somehow or other I fall down on the process and have reached the point of giving up unless I can get some outside help.

Some of the trouble is that for my requirement just too many options are open. All I want is to change type size and margin to have this layout named QUOTE (or a number) to bring it up with only one or two actions and when completed to get back to Base Layout with a single action. I do not want anything else, which might confuse me.

Charles Jackson, Dyfed

Stock layouts are changed from the f1 Document set-up menu (where you change the headers). So, once editing your TEMPLATE STD press f1 and select DOCUMENT SETUP, then press f2 to select LAYOUT. Then select CHANGE STOCK LAYOUTS. The layout list will then come up: choose your layout and press ENTER. Then edit the layout to your liking. With f7 you can call it QUOTE or whatever. Then press CANCEL and go back to the template. Save it. There it is!

Lost tome

Some time ago I purchased *Decision Maker* from Triptych Publishing Limited, from their BrainPower Application Through Learning series. Unfortunately I have lost the book that accompanied the program and find I am unable to run the program without it.

I have been in touch with Triptych but they say they no longer handle this range so they cannot be of any assistance to me.

I am hoping that perhaps one of your readers could put me in touch with someone who could supply me with the book I need to run the program.

K. Shrimplin, 26 Burt Avenue, Balkwell Estate, North Shields, Tyne and Wear NE29 7HL.

Just say no

This week after many months of trying to get rid of a virus called SCA and its brethren from my collection I succeeded. Now, another more prolific virus has reared its ugly head! Has anyone heard of Lazarus? If you have what can I do to kill it? I can quite honestly say that I possess no pirated software. I caught SCA from a borrowed disc so beware. Nor have I tried to hack my way into any games. "I'm not clever enough to do that" I do not own any P.D. software so I cannot understand how I *have* acquired it.

I have a suspicion that it could be the efforts of a software protection program, that has broken out somehow, as a quick look at the disc in workbench revealed it as Lazarus and not Elite and this happened after it had crashed and ceased to load any more. I tried two virus killers on it and subsequent discs that went the same way but to no avail. *Diskdoctor* helped in revealing that all cylinders were Hard Error on both sides and now they all read "unreadable" with corrupted files.

My latest game, *F.O.F.T.*, has died after only two days and is now renamed Lazarus. It's the last straw. I have ceased all progress on my Amiga 500 until I can do something to sort this out. Can anyone help?

P. Franchen, London SW20

No profit

I would like to tell readers that the CP/M & MSDOS Users Group has published Volume One of its MSDOS Software Library Catalogue. This volume covers the UK MSDOS Library, the PC-Blue Library, Grab-Bag Software and ALDE Publishing's C CD-ROM.

All this software is now available to members of this group; for details of the catalogue and of membership please contact Mrs Diana Fordred at 72 Mill Road, Hawley, Dartford, Kent DA2 7RZ.

Volume Two, *The PC-SIG Library* is at present only available on disc (also from Diana).

The group is a non-profit making members' club, and in addition to its software library, it publishes a journal, runs a book lending library, and provides a bulletin board on Windsor 0753 868196. The protocol is 8-bit, no parity, full duplex, with automatic selection of baud rate. Much of the software is available via the bulletin board.

J.S. Linfoot, Oxford.

Euclidian geometry group

I am writing to inform you of a new user group which has been formed to support users of the Archimedes 3D design program, *Euclid*.

Elements, as the group is known, will for an annual subscription of £10 provide a quarterly newsletter including Euclid files, utilities, hints and tips, letters in the form of a disc.

The first issue will be available in October, then January, April and July.

Members will be encouraged to exchange ideas and material through the group in order to increase the effective use of both Euclid and the Archimedes.

Further membership details are available from Euclid's authors Ace Computers, on 0223 32255.

Richard Molyneux, Elements Organiser

Lines on Popular

He made the choice to stand in the garden

Sniffing the stench of rotting circuits

The brown earthy patch was laden with wire,

RAM, disks of data and white DOS attire,

Why is it burning like Grandma's fire?

It was a shame that trusty red brigade never really saved his plethora of Ninjas, his space full of alien vegetables and gravy, his army of ghosts and hereo techno, butch boy fighters, his compassion for computers and his pedestrian sense.

Oh lo! lo! cries of woe!

More sad than sad could ever be grateful

To be reading

Popular! Popular! Oh to be Popular!

Samuel Plunkett, Plaistow

Money for nothing

Does your taxman have the upper hand? Andrew Banner reviews an accounting package to help you with alien customs

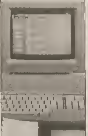
Born free — taxed to death. The statement is true but are you being charged more than your share? The only way to discover that is to spend hours working out your tax returns or to employ an accountant to do the same job. Accountants are not cheap and calculating your own tax can be a headache, especially if you have difficulty understanding the complex system.

Where do you turn? Do you trust that local income tax inspector and hand over your hard earned wages obligingly, or do you take steps to make sure that you give him only what he deserves?

Personal Tax Planner is a new program from Digita International for the ST. It is also available for IBM and compatibles, Amstrad PCW and Commodore Amiga, and will calculate your tax returns for any given tax year.

Unlike many of the newer personal productivity software packages for the ST Personal Tax Planner is menu-driven as opposed to using the GEM environment. Do not let that deter you before you know what the program can do. The menu system is a tried and tested method of operating software and in this case works very well. I think if GEM were used it might have hampered the use of the software, although it could have looked more presentable.

Designed by an accountant, Personal Tax Planner offers the ability to enter, amend, examine and delete data. The data can be in different forms such as your main income, any extra income, interest received from bank and building society accounts and pensions, although there are many more options. Once you have input all your income for a single tax year you can have the program compute the amount of tax payable on your income. With options to display or print the data, the program will display in detail, all your income data and then analyse it. Finally you will be given a figure which is the tax you should have paid. Of course



you need not enter information about the whole year and can extract certain months.

Income data can be saved to disc and loaded again and there is no file security, no passwords, no compaction of data, no jumbling. In short, anyone can load any compatible file and examine it without difficulty.

The biggest asset of Personal Tax Planner is its ability to produce tax returns from 'what if' situations. If you were considering a secondary income you could input further data to find the tax payable on your new or prospective income. Once you have reached a figure the data can be deleted to return you to your actual income.

Personal Tax Planner appears to be somewhat limited in its scope at first but the data menus run deep and include many income options. The big let-down of the software is the lack of security and the poor instruction manual which just skims the surface of the software and provides little information on the country's tax system.

If you are considering this software, remember it is the only one of its kind. After buying it you are likely to need one of the many books on the U.K. income tax system before you can understand the usage of Personal Tax Planner fully.

CONTACTS

Digita Integration 0395 270273
Price. £39.95

PUZZLE

"These are interesting numbers", said Ben to Jamie. He wrote three four-digit numbers on a piece of paper and then continued. "Now, what I am going to do is to apply a sequence of simple operations to each of these numbers in turn.

Here we have the three numbers:

2163 6501 6921

First we add 1 to each digit in turn, a '9' becoming a zero

3270 7612 7032

Then we reverse the order of the digits

0723 2167 2307

Now, we multiply by 3

2169 6501 6921

"As you can see, this gives us the original three numbers again. In fact, they are the only three numbers having four digits for which this is possible"

"What I would like to know is if it would work for any four-digit numbers if we were to *divide* by three rather than multiply in the third step?"

Can you help Jamie find any answers?

SOLUTION TO PUZZLE OF JULY 27

Answer: ORANGE = 540270 RED = 403 GREEN = 74002 and INDIGO = 623075

Solution: In the listing shown, sample values are allotted to each of the letters in turn. Starting with the digits column of the sum, three loops are generated – lines 100 to 140 – to represent the letters E, D and N. In each case a check is carried-out to ensure that each of the values is different from the other two. Once they have been computed as possible values, the value of the letter 'O' can be calculated easily – line 150. This is tested against the letters already in use to check that its value differs.

The program then introduces two more loops, G and R – again carrying out the necessary cross-checks – and from these values the value of the letter 'I' can be determined – lines 240 and 250. The remaining letter 'A' is then included using the loop at line 270. In this way all possible arrangements of values are computed. Lines 290 to 320 then compute the full values of ORANGE, RED, GREEN and INDIGO respectively. If they agree with the original sum – line 330 – the values are printed-out.

```
1 REM When typing in this listing don't confuse the letter 'O'
     with the zero (0) or the letter 'I' with the one (1)
100 FOR E=0 TO 9
110 FOR D=0 TO 9
120 IF D=E THEN [illegible]
130 FOR N=0 TO 9
140 IF N=E OR N=D THEN [illegible]
150 [illegible]
160 IF [illegible] THEN [illegible]
170 FOR [illegible] TO 9
180 IF [illegible] THEN [illegible]
190 [illegible]
200 [illegible]
210 IF [illegible] THEN 370
220 FOR R=1 TO 9
230 IF [illegible] THEN [illegible]
240 [illegible]
250 [illegible]
260 IF [illegible] THEN [illegible]
270 FOR A=0 TO 9
280 IF [illegible] THEN [illegible]
290 [illegible]
300 [illegible]
310 [illegible]
320 [illegible]
330 IF [illegible] THEN [illegible]
340 PRINT [illegible]
350 NEXT A
360 NEXT R
370 NEXT [illegible]
380 NEXT N
390 NEXT D
400 NEXT E
```


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HOTLINES

Who owns computers? What kind of person is it who spends half their lives closeted in a dark room with a piece of machinery? I set off to discover. Spectrum owners are identified by being young and hysterical, or old and still tinkering with the machine they bought when Sir Clive Sinclair created the low-cost computing market. Spectrum owners frequently have modems. Spectrum computer shows are now free-for-all jumble sales

Commodore 64 folk look worried, haggard and desperate. They look worried because they realise that the C64 is seriously under-powered compared to big

The Mystery of the Mummy

boy computers and despite advertisements of yesteryear claiming elephantine memory; the sad truth is that it is getting senile

They look haggard because of the time spent waiting for software to load. Aesop's famous tortoise and the hare fable is in fact allegorical – both animals were really Commodore peripherals. Commodore 64 owners are desperate to upgrade but the DTP advertisement is still printing-out.

The average Amiga owner is the smug-looking type at the local computer club. He ditched his 8-bit system only last Christmas but is desperate to convince that he had had 16-bit power for years. Amiga shows are worthy affairs, often attended by vicars where the grown-ups talk about vertical raster bars, how genlock is transforming their lives, and try to conceal the children where they start playing the latest game converted from the ST

If your 8-bit owner votes Labour and the Amiga owners are true blue, your ST owner is the one who has the power and does what he likes. This means enjoying games, a spot of WP, a dab of DTP. ST owners used to be the nouveau riche but after paying £24 95 for games they are now nouveau broke

William Tell retold in *Crossbow*

Now for something useful. *Crossbow*, the legend of William Tell is coming from Screen 7 and there is a picture of it on this page. It is all about repression and William's determination to stamp out evil, rescue his son and free the land forever. Load it into your ST, Amiga, PC, C64, Spectrum, CPC and put the Tchaikovsky album on the turntable

He is a man with a mission, a man determined to stamp out the evil of drug trafficking. He has obviously seen Death Wish 4, another all-format release from Screen 7, coming soon, called *Fallen Angel*

Artronic has a new driving game coming – check the picture – which is a kind of *Lombard RAC Rally*, without the Lombard RAC. It looks satisfactory and features a world championship and gives you the chance to drive a Spice Engineering SE89C sports car. It retails at £19 99

Bad news one. The fifth landscape in the Populous expansion disc has been changed from Samurai land to The Bit Plains

Mystery of the Mummy is a new release from Rainbow Arts and has digitised sepia tone pictures and murders all over the place. It is your task to sort it all out and unravel the mystery in this intriguing adventure, available on C64 disc, ST, Amiga and PC any time now

Fastlane – a legal way to drive drunk.

Duncan Evans

PREVIEW

Program Fiendish Freddy's Big Top 'o Fun
Version Amiga ST, PC
Price Amiga, ST £29 99, PC £34 99
Supplier Mindscape
Previewer. Andrew Banner

RELEASE DATES

Amiga September
ST September
PC September

Just how many events games can you stand? We have got *Summer Games, Winter Games, California Games* and even *Caveman Ughlympics* and I am going mad

The computer scene has been swamped with these types of games but *Fiendish Freddy's Big Top 'o Fun* from Mindscape is an exception. Fortunately for all of us this latest offering is very different

As the name suggests, the game takes place under the big top and is full of humour. The circus needs to raise $10 000 in one night to repay an overdue loan. If you fail to find the money, you lose your circus. To raise money, you need to perform six traditional circus acts. They include the high wire walker, trapeze artist, high diving into ever diminishing water tubs and the human cannonball

At the end of the event you are judged by a panel of humorous clown characters who will award a sum of money according to how well you performed in the last event

● The judges table

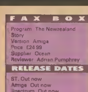
Of course, the whole idea of the circus is to get everybody laughing with the slapstick humour so many love and this is exactly what Fiendish Freddy does. The judges also employ this laughter method and attack each other constantly. They also change their facial expressions to match their opinions of the past performance

● Fiendish Freddy's Big tub o water

The loan sharks do not want to see the circus survive and have sent a bully boy – Fiendish Freddy – to sort you out. Freddy will appear during the event and perform some fiendish trick to try to hamper your progress

It all adds up to plenty of fun and unlike most other games of this kind, you will never master it or get fed up with it. The more you play it, the more you will discover and the more you will laugh

Fiendish Freddy's Big Top 'o Fun will be released on the Amiga, ST and PC in September with 8-bit versions to follow later in the year.



The title of the game did not prepare me for the sight I received upon booting up this game I have seen some strange heroes in my time but a laser toting Kiwi wearing bovver boots? I ask you

The game does not take long to trans verse from the sublime to the ridiculous and every second of the transformation is a sheer delight The plot is brief and bizarre A psychotic walrus with a taste for Kiwi has 20 of your friends trapped and lined up for lunch Escaping from the zoo you set forth with your trusty bow to wreak a little havoc The landscape is constructed w th a series of platforms inhabited with some very strange characters In the early stages the common foes are the hermit crab who pops in and out of its shell and throws huge spiked balls and rockets along the plat forms

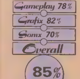
Next comes the boomerang toting soldiers and something small and furry with pointed ears While these creatures guard the landward approach to your captured friends the skies are filled with some even stranger sights These range from bomb dropping bats to owls mounted on ducks very strange indeed

With a well placed shot our flightless


• Wally Walrus is a greedy hog

hero can steal these airborne trans porters to take the battle to the skies And if all this was not enough Kiwi can don a snorkle and enter the briny de piths

The strength of this program lies in its speed – it can take as little as 15 seconds to complete a level – its variety the sheer weirdness of the monsters and its mixture of cuteness and violence The bow may not sound very violent but it can be upgraded to more deadlier weapons – and they certainly will be needed when you meet some of the walrus larger friends





Once more the plot is minimal The Earth has been enslaved and as the lone surviving hero it is your task to introduce the aliens to the finer points of butting laser beams Before you start this guided tour of war torn Earth ensure you have an auto fire on your joystick A constant stream of laser beams is not only desired but essential

Your character Captain Cosmoee, can catch a few bullets in his teeth before expiring but nothing grinds down the energy more than running into an alien you should have des troyed

Occasionally when you terminate an alien a flask is seen floating upwards If the flask is green contact with it replenishes lost energy conversely a red flask removes energy Ther can be a little tricky if you kill an alien when it s almost on top of you as the resulting flask passes through your character before you see its colour It is bad news if it is a red flask The aliens may be small but they get up to all kinds of tricks Most attack on foot cannon-fodder style but other more wily bug eyed monsters ride anything from con traptions better suited to a farmer's field to the latest in fighter technology

Apart from the creatures which move on two legs, commonly known as bi pede, there are beasties like the fly hover and creep They include every thing from abstract ships to blinking eyes

Although the shooting element is crucial the main emphasis is on plat forms Leaping from level to level vertically is satisfactory, so long as you turn off your auto fire first but leaping across gaps can be a real pain You have two lengths of jump Selection between

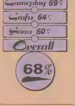


• Easter egg in space



• Be serious – one green eye and a b t of lead piping doesn't fool me

the two depends on how long you hold the joystick in the jump ng position Unfortunately in heated moments you tend to opt for the short jump when you need a long jump, thus ending up in the drink There is noth ng outstand ngly good or bad about this game



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Golvellius 73%
Price £24.95
Altered Beast 42%
Price £24.95
Time Soldiers 89%
Price £24.95
Reviewer Duncan Evans

CONTACTS

Virgin Mastertronic
Telephone 01-727 8070.



• *Golvellius* – a search for the life giving herb

Good news for Sega fans is that Virgin Mastertronic, the company responsible for U.K. marketing, has unleased a plethora of games on to the market. In this first article we look at *Golvellius*, *Altered Beast* and *Time Soldiers*

I have no idea why the first game is called Golvellius since it is all about the kingdom of Aleid a drought, a princess who goes missing, the king retiring to his deathbed and the adventures of a youth called something or other. You play that youth on the quest for the herb to save the king to find the princess and save the kingdom from the water shortage

To kick off you have smooth sideways scrolling, with little furry animals gently wandering up to you. You chop them to little furry bits with your sword. That is easy enough and before you know it you are out and on to the second section. Trapped in a valley of your own making, or something like that, we go to commando-style perspective, with four-way scrolling and four-way sword play which is irritating since there are eight way monsters. Pop into the little holes scattered around suffer some cute vignette of something small and furry and usually helpful than out hacking again until you have collected seven crystals, whence the gate to the valley of Golvellius opens and you are off again. It has average gameplay but pleasant graphics and reasonable sonics

• *Altered Beast* – or the cat's been at the dustbin again

You may know what it is like when you have had one drink too many. You are lying dead drunk and some old mystic says rise from the grave and rescue my daughter and you follow the bloke. Those guys attacking you look as if they have just got out of the ground, and that tiger? Surely that is Mrs Jones' Nibbles from down the road. Dear me even all the characters are flashing and everything seems to be happening in slow motion

Alternatively you could play Altered Beast because exactly the same thing happens except that you do not have a hangover in the morning – only the black despair at having wasted money on this poor effort

Time Soldiers was much more to our liking. It is all about shooting your way through the various ages of time while hunting for your trapped comrades in the war against someone unpleasant. It is Commando time, with vertically scrolling shooting action loads of enemies, all tailored to the particular age, throwing all sorts at you

You half disappear in the bushes and slow down you are armed with a pea-shooting bazooka and can pick up extra weapons along the way

Just nail that alligator or prehistoric man and a rocket launcher appears or a three-way gun or plasma weapon. It just shows those primitives were more advanced than you think.

There are plenty of time zones and on some of them the action switches so that you are scrolling horizontally

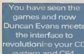
At the end of each level there is a particularly nasty guardian – particularly large as well

Great graphics, plenty of inventive touches tough gameplay and satisfying amounts of violence

Time Soldiers was certainly my pick of this bunch

• *Time Soldiers* – stalking through the undergrowth exercising those commando tactics

CD Connection



There is no denying that CD technology is all the rage at the moment but with machines like the PC Engine, and companies like Mirrorsoft producing *Defender of the Crown* on CD for PCs leading the way, what Rainbow Arts is about to launch on to the unsuspecting public is rather surprising.

● Above: Frail but ineffective, the interface relaxes on a QWERTY

● Right: Your CD bundle of 10, but the games are all familiar friends.

1st CD Edition is a package which offers 10 games on a standard CD a fairly clear instruction manual and a 2½in by 1½in. interface, all for the Commodore 64. All you have to supply is a very standard lead and a reasonably expensive compact disc player

The concept behind the package from the West German company more famous for Denaris than any hardware ambitions is that, if you have a C64 but not a disc drive and are looking for faster data access, or faster loading games in this case, all you have to do is plug the interface into the cassette port of the computer and connect it to an ordinary compact disc player

It is a strange thing really: I know of very few people who have a C64 and no disc drive but can afford a CD player Perhaps this package is aimed at someone living at home who can borrow their parents player

You can get to grips with this bizarre concept by plugging in the very frail looking interface It is not boxed so dropping the C64 on the floor with it inserted is likely to lead to a fatality

There is a telephone socket on the circuit board and it is used to connect the interface to the LINE-outs on the back of the CD player – or the left or right channel if there is not a specific LINE-out socket

A word of caution. I tried using my portable Sony Discman but, even with full volume, not even the menu would load. If you have a portable try to check in the shop that it will work before you buy

The full-size Sanyo had no qualms about interfacing with the C64, though, and after typing LOAD, the menu loaded from the spinning disc in about 40 seconds

The menu offers 10 games and after selecting one with the cursor keys – joystick use should have been an option – you are given a track number to jump to on the CD player Once that is accomplished, press the spacebar and the game of your choice loads in 30–50 seconds.

If there are loading difficulties, try the other channel as the programs are recorded on both. If that does not work you can add 20 to the track number – all 10 programs are recorded twice

If you are thinking I have a disc drive anyway but I have a CD player and this sounds like a cool idea, let me tell you why it is not

For one thing you are not exactly getting a CD check-a-block with code Both blocks of programs take around six-and-a-half minutes, with less than one minute for the original menu, so we are talking 14 minutes of program. That is not exactly exploiting the new technology, is it?

As an added treat there are seven tracks of the dubious musical talent of Chris Hulsbeck, a kind of German David Whittaker, which can be played through your speakers like a regular CD The computer tunes, to which you listen once only, take another 35 minutes It says there are 10 of them – in the manual and on the box – but there are not.

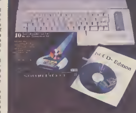
So far what you have is a moderately quick – compared to tape – alternative method of loading programs. Except that you can only read from this CD – you cannot save anything on to it, so it has to be treated as nothing except a novel way to load 10 games

Then you look at the games. You get *David's Midnight Magic* (pinball), *Leaderboard Mission Elevator, Impossible Mission, Dropzone, Loderunner Solomon's Key, Jinks, M.U.L.E.* and *FIST II* Apart from Jinks which was a Rainbow Arts game anyway, the rest of the collection is prehistoric, the newest dating from 1986

It is at this juncture that you realise that Rainbow Arts has cut every corner and every cost imaginable What you are paying for is a novel way to load 10 old games – and not particularly fast from a piece of hi fi which may need to be dragged round the room before you can connect it. Only if you had a CD player, did not have a disc drive or any of these games and wanted a collection of semi-classics could this strange concept be worth paying for ☐

CONTACTS

1st CD Edition
Rainbow Arts
Contact Berrington Harvey
Price Circa £29, to be confirmed
Tel 01-278 0333



Sir Clive speaks

Sir Clive Sinclair, latter-day computer genius, speaks in a rare interview to *Popular Computing Weekly*. Undeterred by the C5 flop, we find he has plans for two-wheels in his empire. Words by Leslie Bunder, pictures by Steve Coward.



Since forming his first company, Sinclair Radionics, in 1961, Sir Clive Sinclair has probably invented more ground-breaking electronics goods than any other individual From radios to wristwatches and computers to cars, it can be said that Sir Clive is a man who has been there, seen it and done it His quest for introducing something new and different often can reach the obsession stage, like his 20 year quest for perfection in producing a pocket television set

Even now, despite the financial failure of the C5 vehicle and the butt of many jokes, Sir Clive is still working on C10 and C15 vehicles which some day will make it on to the production lines and hopefully on to the roads

It seems probable that it is this obsession which makes Sir Clive tick. He is a man concerned that his products should reach as many people as possible and be of benefit

> *"I have a hell of a lot I want to do and I see myself at the beginning rather than the end"*

to the whole of society One has only to look at what Sir Clive has produced and you can see clearly that his products are non-elitist. The calculator, computers and car were all much cheaper than anything else on the market and had mass appeal.

Sir Clive is not a man who copies, he took on the Japanese and Americans at their own game and won It was because of that and his contribution to society that in 1983, at 33, Clive Marles Sinclair was knighted, doe recognition for a man who created a multi-million pound industry and that does not even refer to the hardware

Without the name Sinclair, the software games giants of Ocean, Mastertronic, Elite would not have enjoyed their massive success Even the computer publishing industry owes its due to Sir Clive, with three magazines having his name as their title

With Sir Clive's no-frills approach to computing, he also allowed companies to make such added extras as joysticks,



◀ QWERTY keyboards and many other items for his range of machines In short, he allowed others to create businesses via the products he produced

Sir Clive is not generally known as a man who seeks publicity It is several years since he spoke to *Popular Computing Weekly* or anyone else at length, as the following interview will show

Pop **It is now almost 10 years since the ZX 80 appeared, did you think home computing would be as big as it has become?**

Sinclair Not quite as popular I certainly hoped it would be a big thing and hoped it would be something which captured public imagination We set out to try to sell to the general public, as opposed to just the enthusiasts around at the time It grew much bigger than we hoped

"I am developing this bicycle . . . The purpose is that when you arrive at your flat, office or underground station, you can fold it instantly so that you can take it in – rather like an umbrella"

Pop **Of all the computers you have released, which is your favourite?**

Sinclair I think, in a way the ZX-81 was a good little machine I am very pleased with the Z-88 I tend always to look forward to the next machine rather than back.

Pop. How is progress on wafer scale integration?

Sinclair It is coming along well It will still be a large memory drive and the initial sales will be to the large computer manufacturers It is still going to plan

Pop **Can you outline plans for a powerful processing device we gather you are designing?**

Sinclair That work is broadly secret so we cannot say much about it, but it would be foolish to deny it

Pop **With Atari, Psion and Poquet releasing very lightweight pocket PCs, is this an area into which you have plans to move?**

Sinclair Very much not so I do not see the logic behind those machines The concept, or suggestion, is that they are PC-compatible Well, they are simply not, because it is very important to realise what PC compatability really means It means for the customer total compatability; that is to say, it must have a proper keyboard, a proper display and, in my opinion, it must have a drive If you remove any of those or compromise on any of those the thing ceases to be compatible and you might as well go the whole hog I cannot see the point of those products I may be missing something I do not say they will not sell, no doubt they will in some degree

Pop **Do you use a Z-88 when you do business?**

Sinclair I do not, but then I do not use computers much anyway I do not type and do not have a computer at home I use a pen and calculators

Pop **With so many games appearing on the Spectrum, do you play any?**

Sinclair No, not at all We realised people would play games with them, the principal aims behind the machines was to introduce people to the art and science of computing I do not ever play games myself

Pop **What is happening with the portable telephone?**

Sinclair Sinclair Research formed a company called Shay Communications and the work is now completed The product is now in production and will soon be on the market and Shay has since teamed with Motorola and Mercury to be one of the licensees for the telepoint system The telephone should be a personal object like the calculator and will be priced at £150

Pop **You once had plans for a Stock Market flotation Do you have plans to pursue this idea again?**

Sinclair We have no plans at the moment I do not rule it out but it is much more complicated because Sinclair Research has moved its technology out to several companies it founded – Anamartic Shay Cambridge Computers – and they might or might not go public and Sinclair Research might or might not go public on its own

Clive Sinclair has revolutionised the world of electronics, from calculators to wrist-watches.

The Z-88 – brought lap-tops to the masses, but Sinclair remains the visionary

Pop **Will 1992 benefit British computer companies and yourself?**

Sinclair Broadly anything which opens the barriers helps but whether the barriers will come down in that area we will have to wait and see Clearly we still have to do special keyboards for different countries I do not see that changing. I think it is a

"I think the next generation will have computers in the home which are highly intelligent and start to give advice to people"

"I do not think it is a question of curbing the power of the computer, it is a question of how it uses its power"

psychological benefit but in practice I am not sure there will be a big change I am concerned about the protectionalism that seems to be creeping into Europe I am worried about Europe setting up tariffs against chips coming into Europe What I foresee is that companies in Europe might be at a greater commercial disadvantage than companies outside Europe because the Common Market might have insisted on very high prices for memory chips, for example to try and protect the internal



And its only just begun, Mensa member Sinclair still has a few things up his sleeve.

industry which will mess up the computer manufacturers

Pop: Do you have plans to move into the development of CD ROM?

Sinclair No I think the application is very limited and they have been over hyped It has much to offer games if it is cleverly used

Pop: Would you ever consider releasing a hand held games machine?

Sinclair I am not really so interested in games I see the appeal but that is not the field we are in. If we could see a way of doing something dramatic, and we have looked at that in the past, we would do it. We are interested only if we can do something radical in the engineering side We are interested in technical frontiers and breaking new ground and if that happens to be in the games area, we will do it. The games area does not offer us that opportunity at the moment.

Pop: Have your views on computing changed through the years?

Sinclair No, I think it is going the way I saw it going. I think we are getting close to the days when students will all be carrying computers because the Z-88 is being used a great deal by students for that purpose That will change computer literacy greatly From that will emerge a nation of people who are completely familiar with computers and I think the next generation will have computers in the home which are highly intelligent and start to give advice to people

Pop: Is it safe for computers to start forming intelligence?

Sinclair Nothing is without its risks and I think that has plenty of risks but it is a question of getting it right. I do not think it is a question of curbing the power of the computer, it is a question of how it uses its power

Pop: Do you still have ambitions?

Sinclair Absolutely, I have a hell of a lot I want to do and I see myself at the beginning rather than the end There are two areas which concern me most and they are very long term products – artificial intelligence, for which I mean machines which really do rival human beings and electrical vehicles

Pop: Regarding artificial intelligence, can you put morals into machines?

Sinclair Whether you call them morals or not, I do not know I think you need to put constraints into them It is something necessary that I will do

Pop: Have you made any decisions not to release any products through fear or worry they are too intelligent?

Sinclair I have not developed products of that kind but the day may dawn when one will have to look carefully at the consequences of products as they become more powerful I can certainly see the day when one might regret games machines – when they become so realistic that they seem just as real as life and that people can become addicted to them as they get addicted to drugs one would be very cautious about introducing such products

Pop: What motivates you to achieve what you have achieved?

Sinclair Well, entirely the desire to change the world in a small way, to bring out products which will make peoples' lives more interesting or more useful The pocket calculator was just a tremendous thing for people to have, so too the personal computer and I feel passionate about the portable computer I want to produce new kinds of products which will change peoples lives for the better The home computer is a clear example of how it would enrich peoples' lives and now I am developing this bicycle

Pop: Bicycle, it does not sound very electronic, can you further expand?

Sinclair The idea is very simple It is the best way to get around town but a very inconvenient object when you arrive If you can solve the inconvenience when you arrive, you have a very exciting product, so I'm working on that It will be a portable bicycle It will not be electronic and it will be two years before it appears because it is a very big job To do it you have to use radical materials and have a radical design The purpose is that when you arrive at your flat office or underground station you can then fold it instantly so that you can take it in – rather like an umbrella It must be dramatically lighter than a normal bike – and the lightest bikes have been the same weight for 100 years

Pop: How do you feel on reflection about your portable TV?

Sinclair Perfectly sound product We thought there would be a large market for such a product and so did the Japanese but the world market is still very small.

Pop: Can you give any sneak previews of products you have in mind?

Sinclair The main thing on which we are working is a PC-compatible portable It is

"I can certainly see the day when one might regret games machines – when they become so realistic that they seem just as real as life and that people can become addicted to them as they are addicted to drugs"

some way off and not in the same category as the Z-88 and also the very advanced computer chip about which we cannot talk now

Pop: Aside from Mensa, do you have any other hobbies or interests?

Sinclair Yes, I am very interested in music, reading, poetry and mathematics.

IS IT A SIMULATION

OR IS IT REAL?

Stopwatch

Steve Carter

WHEN developing a program, in most cases speed of operation is a very important factor in its success or otherwise. How do you establish the fastest way of writing a routine you think may be running too slow?

I developed this routine *Stopwatch* to use the internal clock so that I could make alterations to a program and see the effect on the time it took to run. It is a sub-program so that none of the variables in the routine will clash with the main program when it is tacked on to the end. The two variables which must be placed in the main program have long names so that it is most unlikely that they will clash with any others. To use it, add it to the end of your program and put

FirstTime$=TIME$ FirstDate$=DATE$

at the start of the section you want to time and

SecondTime$=TIME$ SecondDate$=DATE$

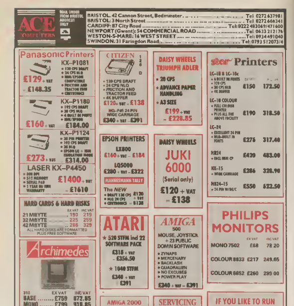
at the end, followed by the call to the sub-program.

The program will cope with timing a program over several weeks but if the internal clock should go into the next month your results will be incorrect, so if the timing is to go into the next month, re-set the internal clock to, say, the first of the month.

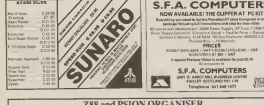
```
REM -------------------------------------------------------
REM        DEMONSTRATION OF 'STOPWATCH' TIMING SUB-PROGRAM
REM -------------------------------------------------------
REM  by STEVE CARTER December 1988
   CLS
   PRINT "DEMONSTRATION OF USING 'STOPWATCH' SUB-PROGRAM"
   PRINT " Time of starting = ";TIME$
   PRINT " PRESS A KEY TO END THE PROGRAM"
Start:
  FirstTime$=TIME$. FirstDate$=DATE$  'Get the time of start
   WHILE INKEY$="" :WEND              'PUT YOUR PROGRAM HERE
  SecondTime$=TIME$:SecondDate$=DATE$ 'Get the time of finish
  REM    ***  call sub-program with arguments of         ***
  REM    ***  start time & date and finish time & date ***
  CALL stopwatch(FirstTime$,FirstDate$,SecondTime$,SecondDate$)
END

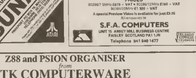
 REM ***********************************************************

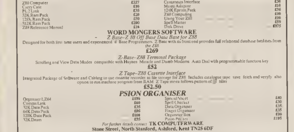
SUB stopwatch(First$,Day1$,Last$,Day2$) STATIC
  REM  ***** CONVERT FIRST-TIME TO SECONDS *****
  hrs=VAL(MID$(First$,1,2))
  mins=VAL(MID$(First$,4,2))
  secs=VAL(MID$(First$,7,2))
  firstval=(hrs*3600) + (mins*60) + secs
  REM  ***** CONVERT SECOND-TIME TO SECONDS *****
  hrs=VAL(MID$(Last$,1,2))
  mins=VAL(MID$(Last$,4,2))
  secs=VAL(MID$(Last$,7,2))
  secondval=(hrs*3600) + (mins*60) + secs
  REM  IF TIMING PASSES MIDNIGHT ADD 24hrs TO SECOND-TIME
  Numdays=VAL(MID$(Day2$,4,2))-VAL(MID$(Day1$,4,2))
  IF Numdays>0 THEN secondval=secondval+Numdays*86400&
  REM  DEDUCT FIRST FROM SECOND AND CONVERT BACK
  elapsedtime=secondval-firstval
  hrs = INT(elapsedtime/3600)
  hour$ = STR$(INT(elapsedtime/3600))
  mins = INT(elapsedtime/60)-(hrs*60)
  minute$ = STR$(mins)
  secs = elapsedtime-(INT(elapsedtime/60)*60)
  Second$ = STR$(secs)
  REM        **********     PRINT RESULTS     **********
  PRINT "  Start  time = ";First$
  PRINT "  Finish time = ";Last$
  PRINT "  Elapsed TIME = ";hour$;" hours.";
  PRINT  minute$;" mins.";Second$;" seconds."
END SUB
```


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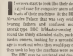

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A day at the Beeb

Duncan Evans joins the resilient species of micro owners at Ally Pally for the BBC Show.



If owners start to look like their dogs there is a good case for computer users adopting the traits of their machines. At the BBC Show at Alexandra Palace that was very evident. Overbearing fathers and confused mothers led anorak type BBC B/Master-owning teenagers round the thinly attended stalls, packs of Archimedes owners, looking for a spreadsheet package to work out when they would pay off the loan they took to buy the machine were everywhere.

The BBC may be outdated and dead so far as mainstream computing goes but that never seems to worry Mum and Dad as they avoid admitting that the machine they bought to educate Johnny was used only for playing *Ballistix* by trying to find the Clares Micro stand.

So far as this show was concerned the BBC was not dead but with only Watford Computer Concepts and Superior showed any real commitment. There were not many nails left to bang into the coffin. It was the day of Archimedes but not in a manner likely to launch it into the computing mainstream.

First let us see what was on offer for the BBC. Wight Scientific – 01-858 2699 – was getting excited about *Signwriter* and its very impressive range of fonts for producing display lettering for £28.95 and £49.95 on the Archimedes. Topologika, famed for re-issued and new adventures, has gone green with a range of booklets, tapes, records and, of course, computer programs dedicated to whales, with assistance from a number of Friends of the Earth, you should telephone Topologika on 0733 244682 for details if you want your children to know about the greatest of mammals.



Remembered as an educational micro, BBC users can still enjoy some impressive software

Substantial

More labelling software, this time from Mewsoft – 01-367 2882 – entitled *The Fancy Labeller* and retailing at £12.95 for the BBC B and Master 128 and £27.20 on the Archimedes. If you fancy something a little more substantial you could try the Permanent Memory Systems – 03652 32796 – *The Publisher* which claims to be a no-nonsense DTP package for the entire BBC range at £39 plus VAT and £1 carriage. Compatible with *View*, *Inter Word* and *Wordwise*. It offers 86 fonts. PMS was also selling its last few Genie and Genie Junior Personal Organiser ROMs.

Topical

Perhaps the biggest splash for BBC owners was made by Impact Software – 0908 654334. Impact showed extra courses for its *Leader board* clone *Holed Out* – topical because Mark Calcavecchia won the Open Championship in the same week – and also a new football game *Arcade Soccer* is a *Microprose Soccer/Kick Off* derivative featuring overhead action and a World Cup in which to compete.

Superior Software has the licence to the Psygnosis *Ballistix* and is threatening its own version of Kick Off which should be available as soon as programming is finished.

Back to the real world with Click, a Master cartridge from Slogger Computers – 0272 743683 – enabling the user to use memo, snapshot, xtree utilities and restore functions.

Possibly the most exciting aspect of the show were the genlock and real time digitisers for the Archimedes. Wild Vision – 091 2818481 – and a large section of hardware items for the Archimedes, including the Chroma 300 series of video overlay and genlock cards. One of the most impressive things at the show was the Hawk V9 real-time colour digitiser. Images are displayed in any Archunedes 256-colour mode with the image resolution being 256x512. Availability is late 1989 and pricing is expected to be less than £500.

Something of a challenge was offered by the Arvis Videographics Expansion Card ARDG 2 which offers real-time colour digitising, grabbing frames at 1/50th of a second and using its own display system to produce 3,200 colours for the finished image which can be used with most art packages. Contact Video Electronics Ltd on 0942 882332 for details.

To augment the power of the Archimedes you could always buy most of the things in the Oak Computers – 0532 502615 – catalogue. Internal hard drives from £296 (20MB) to £555 (40MB 28ms) and externals from £349 (20MB) to £795 (64MB). If you want to use those hi-res modes you need a multi sync monitor – £1,495 for a 20in. screen, then you can play *Warra Battle*, in other words *Battlezone* for only £14.95.

For word processing with extra activities like database search, data entry and spreadsheet generation, *Premier* from Circle Software sounds a good choice. The price is £96 plus VAT. Contact 0793 770021. Or you might like to try *Impression* from Lomputer Concepts. It is powerful yet easy to use, drawing on Concepts experience of producing word processors for the BBC.

Average

Archimedes games are a little light relief – a joke some might say – but there seem to be a few of them around, mostly average renditions of classic arcade games. Considering that the Archimedes can emulate current arcade games *Thunderhawk*, *Hoverbod*, *Orion* – Defender – *Missile Control* and *Ibix the Viking* are not exactly stunning. Thev are reasonably priced, though at £14.95 for all except Ibix, which is £19.95.

Clares Micro, beside the usual educational products, was hinting at an *Interceptor*-style game called *Interdictor* (£34.95) and selling some poor ones like *Overload*, *Wacey Man* (Pacman) and *Bounce a Ball* (Breakout).


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KENN GARROCH

Amiga multi-user

W Oliver of Hampstead, London writes

Q I have an Amiga A500 and access to a dumb terminal and I wonder whether it would be possible to use the two together I know that the Amiga multi-tasks but is it multi-user? The terminal has a standard 25-way D connector and is RS232-compatible If connection is possible, could you show me a wiring diagram to connect the two?

A It is possible to use a terminal with the Amiga and to get it to multi task in a multi-user kind of way You will need Workbench 1 3 and the AUX device

This is like the SER device but does not buffer any data being transferred. To set up the link, make sure both machines are off before connecting them, the Amiga serial chips have a habit of going kaput if you connect things to them while the machine is powered up

Next, boot the Amiga and switch on the terminal. Set them both to the same RS232 speed, e g., 9,600 bps and eight bits, 1 stop bit, no parity Then enter MOUNT AUX. on the Amiga to set up the new serial device Follow this with RUN NEWCLI AUX: which sets up a new CLI window but directs all input and output via the RS232 You should see a prompt – say 3> – appear on the terminal If so, you are in business if not, check the speeds, word length and so on, and then the wiring of the connecting cable The suggested wiring shown works for my Amiga connected to an ST, i e , both serial ports are the same pin-out, all that needs to be done is to reverse TX and RX, and RTS and CTS

Unfortunately the terminal has a number of limitations and obviously cannot run graphics-based applications. It can really operate only the CLI commands as other applications will not operate through the serial port.

If the Amiga had more than one RS232 it would be possible to attach a few terminals to the system but the machine would slow a good deal, especially when performing disc transfers.

Incidentally, if you do not have Workbench 1 3, it is well worth spending the extra £15 or so for the upgrade It is available from most Amiga dealers and extends most of the CLI commands and provides a number of new devices, plus an improved CLI called SHELL.

Suggeste[illegible] to RS232 25 way D connection.

BBC buffers

T Wilkins of Deal Kent writes.

Q I am writing to you because you seem to be one of the few people who still support the old BBC micro model B I would like help with the RS432 buffers and how to get characters into and out of them

A There are two OSBYTE commands which make this reasonably easy There are nine main buffers in the BBC

0 – Keyboard buffer
1 – RS432 input
2 – RS432 output
3 – Printer buffer (Centronics output)
4 – Sound channel 0
5 – Sound channel 1
6 – Sound channel 2
7 – Sound channel 3
8 – Speech

OSBYTE 145 gets a character from the specified buffer and OSBYTE 138 inserts a character They can be accessed in two ways, e g , *FX 138 0,65 puts an A into the keyboard buffer A more flexible way is to use the fact that the CALL command uses the contents of A%, X%, and Y% for the 6502 registers A, X, and Y So, to perform *FX 138,0 65, the following snippet of program would be used

```
A%=138 X%=0 Y%=65
CALL&FFF4
```

A procedure to do this is shown. Getting characters from the RS432 receive buffer requires a little more fiddling The operating system does not return values in A%, X% and so on Instead the USR function must be used to get the contents of the registers.

```
DEFPROCTX(C$)
A%=138:X%=2
Y%=ASC(C%)
CALL&FFF4
ENDPROC
```

BBC RS432 transmit procedure.

```
DEFFNRX
REPEAT
A%=145:Y%=1
T%= USR(&FFF4) AND &FF0000
UNTIL  T%<>0
=CHR$(T%/&10000)
```

BBC RS432 recieve function.

Basic

Peter Wells of Melton Mowbray, Leicestershire, writes.

Q I know you have been asked this previously but I cannot find the back issue with the answer Could you tell me what Basic stands for?

A Beginners All-purpose Symbolic Instruction Code

New ST mouse

N Perry of Telford, Shropshire writes

Q Recently I had an accident whereby I broke my ST mouse Can you tell me where I can get another and how much it would cost?

A A few Atari dealers supply new ones The average price seems to be about £26 Try Microsnips, 051 681 2008, £24, Datel Electronics, 0782 744707, £30, Apolonia Software, 01 738 8400, £23

Ladbroke Computing supplies a tracker ball alternative, £30, 0772 203166

PC emulator – Amiga

Ian Inman of Stanley, Co. Durham writes

Q I have heard of programs known as PC emulators, enabling PC software to be used on other machines. I am interested in such a program for the Commodore Amiga 500 as it will be useful to me. Could you recommend one reasonably affordable which can run as wide a range of PC software as possible?

Also to use one, will I need a 5.25in disc drive? If so again can you recommend a fairly cheap but reliable one? Can you recommend a suitable lead which would allow me to record sound from my Amiga on either a cassette recorder or hi-fi system preferably the former?

A I know of no software PC emulator for the Amiga. There may be one available, perhaps our readers know? There is certainly one available for the ST so it cannot be particularly difficult. Normally, PC emulation on the Amiga is performed by means of the bridge board, an add-on which includes an XT or AT-compatible microprocessor, depending on the board, and enables the Amiga to operate exactly like a PC. Unfortunately this works only on the A2000 so far as I know. Does anyone know of a bridge board for the A500?

As regards the disc size used, many PC compatibles these days use 3.5in. discs which can certainly be read by the Amiga internal drive, so I should think a 5.25in. drive would be fairly redundant.

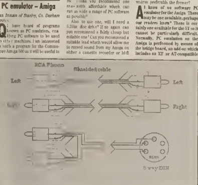
Connecting your Amiga to a tape recorder or a hi-fi is easy. It is probably the easiest machine for doing it. The Amiga sound output is via two RCA phono sockets at the back. It is stereo, so one must go to the left channel and one to the right.

The hi-fi connection is easiest, since all you need is a dual phono to dual phono lead, it is available from almost all hi-fi shops.

This pre-supposes that your hi-fi has the standard RCA phono connectors, which it should have if it is less than 10 years old.

If your connections are different you will have to figure the pin-outs and ask the hi-fi dealer if such a lead exists. It almost certainly will.

I have shown the two commonest connections in the accompanying diagram.



Two common Amiga sound connections.

Spectrum Cheap Jay

M Holden of Broadstairs, Kent writes

Q I read with interest your Spectrum joystick interface article June 28 – but note that you feel it may not work with some software. I thought you might like to see a diagram for an interface which uses In 255, i.e. Kempston Standard, but may be constructed for less than half the cost of your design. I built the unit in a K'tronics keyboard along with a Sinclair 1/2 format interface and three stick sockets. It operated successfully with old and new software for more than two years. The Sinclair standard interface uses 74LS08, 138,244 and 10 resistors. It is not very pretty so I have not included details, but it works.

I use a Ferguson MC01 television set for my display which also has an RGB input. RGB sound and earth are satisfactory but what are sync1 and sync2? Is the input analogue or TTL compatible? Do you or any readers have a circuit suitable for an RGB interface to the MC01? Finally, would an RGB display be better than the composite video signal I use at the moment from UHF mixer input?

I realise Ferguson used to make an interface to suit the Spectrum but I would like to save some money and leave the edge connector free by building it inside the keyboard.

A I suspect my mistake was in using the 8212 chip as this is rather expensive compared to the 74LS366. If you want to interface other gadgets to the Spectrum, the 8212 is a versatile device. For just a joystick interface your solution is better and cheaper. Thank you for sending it.

With respect to your questions, I admit that I am no expert on the Ferguson MC01. I think sync1 and sync2 are probably inputs – outputs? – for the horizontal and vertical syncs. Presumably they could be used with, say, the ST which produces separate sync signals.

Whether the RGB in the Ferguson is analogue or digital I do not know but I suspect that it is digital as I have seen wiring diagrams for using it with the Spectrum 128+ and the like which are digital RGB as far as I know.

Cheaper Spectrum joystick interface

Unfortunately I do not have a circuit to convert the Spectrum composite video signals to RGB as you say adapters exist, so if anyone knows the details send them to me and I will let everyone in on the secret. I may be wrong but most video systems start with RGB signals at some point in their circuitry. They are then converted to composite video and pushed through a UHF modulator for use with a TV. I can only presume that the Spectrum does this as well, what you need is a circuit diagram for it. The normal method of producing a video image is to get values for the RGB levels from the computer memory image.

These three signals are combined to form composite video and then a UHF signal. All this playing around introduces distortion so an RGB signal, straight from the source, should produce the best image. I suspect that the adapters which produce RGB for the Spectrum split the composite signal and so introduce yet more distortion.

Keeping up with the Clives'

When I bought my ZX 81 with its rickety RAM pack and squidgy keyboard I definitely felt that I had entered a new stage of my career. Suddenly I had become part of the computer revolution instead of being an onlooker. Many of the programs being published then were fairly elementary and written in Basic. Aliens were graphics characters which staggered across the screen and which were shot down by painfully slow missiles.

You could understand the programs, change them, improve them or write better ones. You felt like a pioneer and the letters and articles in the magazines reinforced that we were all seekers looking for an understanding of this marvellous equipment on which we had laid our hands and looking for problems to solve on it. The lure of obtaining a second income or even becoming fully independent to work in the comfort of your own home beckoned.

The limitations of the ZX 81 quickly became obvious and I graduated to the Commodore 64 to get my hands on a real home computer with reasonably high resolution graphics, colour sound and a proper keyboard. The horizon had expanded. Nothing seemed impossible and I made some money out of it by using the computer for word processing and getting a few small programs published. Even then it appeared that it was possible to reach the level of the professionals with some application.

I did some business programming and learned at first hand what the computer books do not tell you – professional-level programming is sheer hard work calling for a high degree of concentration and attention to detail. They do not mention the need to acquire the ability to second guess what an inexperienced user will make of your on-screen text messages and the need to make the program bug free and error trapped.

Writing programs is not so easy as it looks and I expect that there are many computers collecting dust in cupboards after owners abandoned the dream of becoming a programmer.

Undaunted I struggled to master machine code and improve my Basic to try to learn how to write high-quality programs. Even as I was doing so a new generation of computers was appearing on the market. They had very high resolution graphics, a superb range of colours, hi-fi quality sound and a complication to match. Games programs became a pleasure to watch because of the quality of the graphics even though they were the same old plots rehashed time and again.

Aliens had gone from blobs to detailed figures which interacted with each other, the background music was now a recognisable tune and the scenery rolled smoothly across the picture. Competitions appeared to encourage graphics programmers to display their best work.

The quality of some of the winning pictures was so good that you had to look twice to see if they were not really photographs. There were those sequences of swinging, shiny balls complete with accurate and changing reflections. Real art, beautiful things which must have taken hundreds of hours of work to create. Some of the finest sequences appear on television where it is becoming increasingly difficult to distinguish the computer-generated from the real.

I can only stand back and admire such industry. I know I cannot emulate it. I do not have the equipment, the expertise or time. Nor am I likely to acquire it; the technology has advanced out of my reach and I cannot keep up with it. I have moved a step back to become a user rather than a creator. It is not that I have lost interest – far from it, the fascination lingers but I spend more time writing about it than doing it.

Fortunately no program has yet been written which can generate even simple articles. I do not resent being out of the mainstream of computing but the advances in technology have taken away my dreams. Where has the magic of those early days gone?

Peter Graves

NEXT WEEK

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ELECTRONIC TIMES

Interceptor, Populous, Battle Chess, Bards Tale, Powerdrome – yes EA have a lot to talk about. We shoved a tape recorder in the window and listened in.

FLY BY NIGHT

Lee Paddon goes on another sortie around a Worcester living room – this time in Dave Marshall's *F 16 Combat Pilot*.

AUCTION

Cheap and cheerful micros can be had at fewer than bargain prices – if you know where to look.

PRINT DUMP

Yet another Printer launched and yes, you're coming sharing, digging and delving. Pop scriber were there to review the machine.

Plus . . .

All the LATEST news from the U.K. and the U.S., techie-time with Keen Garrach, your listings, our reviews of the best games of the week and your letters. And Vince Wong might just creep in (who ha ad?)

INTERFACE BY BRIAN COOKMAN





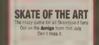

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